

REMARKS

Claims 1-9, 12-18 and 20-22 remain pending in the present application.

Rejection under 35 U.S.C. §103(a) over Simone

Claims 1-9, 12-18 and 20-22 stand rejected under 35 U.S.C. §103(a) as obvious over Simone (U.S. Patent No. 4,332,927). Applicant traverses this basis for rejection and respectfully requests reconsideration and withdrawal thereof.

The present invention is directed to a polyurethane article with low fogging characteristics derived from a polyurethane forming reaction mixture containing as a catalyst for the mixture an organotin compound having low emissivity of the general formula R_2SnX_2 wherein R is methyl and X is a carboxylate group with 14-20 carbon atoms having at least one olefinic double bond (claim 1).

Simone discloses a two component polyurethane forming composition containing an effective catalytic amount of a dialkyltin dicarboxylated compound having the formula: $R_1R_2SnR_3R_4$ wherein: R_1 and R_2 represent linear or branched alkyl groups having less than about 18 carbon atoms per molecule; and R_3 and R_4 represent carboxylate groups derived from (a) one or more saturated or unsaturated, linear or branched aliphatic hydroxy-carboxylic acids having from about 2 to about 18 carbon atoms per molecule; (b) one or more saturated or unsaturated, linear or branched, aliphatic carboxylic acids having from about 14 to about 20 carbon atoms per molecule; and (c) mixtures of (a) and (b) (col. 3, lines 38-61; emphasis added). Notably, Simone expresses a preference that R_1 and R_2 be C_8 to C_{18} alkyl groups (col. 5, lines 21-23).

As such, the dimethyl tin catalysts of the present claims represent a limited number of species within the broadly disclosed genus of Simone.

In concluding that the present claims are obvious over Simone, the Examiner finds:

Simone differs from applicants' claims in that it does not particularly specify that its R_1 & R_2 and R_3 & R_4 groups be methyl and 14-20 carbon unsaturated group containing chains, respectively. However, Simone does provide for operation within its disclosed

selections of compounds for the purpose of providing acceptable catalytic function. Accordingly, it would have been obvious for one having ordinary skill in the art to have operated within the selections of catalysts provided for by the teachings of Simone et al. for the purpose of imparting their known reaction catalyzing effect in order to arrive at the products and processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results. (Office Action, page 2, emphasis added).

Thus, the Examiner has essentially concluded that the genus of Simone makes obvious the individual species of the present claims. Applicant respectfully submits that the Examiner's conclusion is legal error. A long history of case law indicates that species within a prior art genus are not necessarily rendered obvious by the disclosed genus.

The fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a prima facie case of obviousness. *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994) ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious.") *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992) (Federal Circuit has "decline[d] to extract from *Merck & Co. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989)] the rule that...regardless of how broad, a disclosure of a chemical genus renders obvious any species that happens to fall within it."). **MPEP 2144.08** (p. 2100-137).

The MPEP indicates a particular process for analyzing the obviousness of a species within a genus:

In the case of a prior art reference disclosing a genus, Office personnel should make findings as to:

- (A) the structure of the disclosed prior art genus and that of any expressly described species or subgenus within the genus;
- (B) any physical or chemical properties and utilities disclosed for the genus, as well as any suggested limitations on the usefulness of the genus, and any problems alleged to be addressed by the genus;

- (C) the predictability of the technology; and
- (D) the number of species encompassed by the genus taking into consideration all of the variables possible. **MPEP 2144.08 II.A.1** (Emphasis added).

In such an obviousness analysis, the Examiner should not ignore the preferences set forth in the prior art reference, as compared to the claimed limitations.

In making an obviousness determination, Office personnel should consider the number of variables which must be selected or modified, and the nature and significance of the differences between the prior art and the claimed invention. See, e.g., *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992) (reversing obviousness rejection of novel dicamba salt with acyclic structure over broad prior art genus encompassing claimed salt, where disclosed examples of genus were dissimilar in structure, lacking an ether linkage or being cyclic);... Similarly, consider any teaching or suggestion in the reference of a preferred species or subgenus that is significantly different in structure from the claimed species or subgenus. Such a teaching may weigh against selecting the claimed species or subgenus and thus against a determination of obviousness. *Baird*, 16 F.3d at 382-83, 29 USPQ2d at 1552 (reversing obviousness rejection of species in view of large size of genus and disclosed "optimum" species which differed greatly from and were more complex than the claimed species); **MPEP 2144.08 II.A.4(c)** (Emphasis added).

As discussed above, the present claims are limited to dimethyl tin catalysts, i.e. R₁ and R₂ are limited to being C₁. Simone fails to specifically identify methyl as a substituent for either of his R₁ and R₂ variables, let alone that both should be methyl. Instead, Simone describes a preferred subgenus wherein the lower carbon number limit is C₈ (col. 5, lines 21-23), well-above the presently claimed carbon numbers. Applicant respectfully submits that such teaching weighs against selection of the claimed species/subgenus as an obvious variant, according to *In re Baird*, cited above. Withdrawal of the rejection is requested on this basis alone.

Continuing at page 3 of the Office Action, the Examiner mischaracterizes the present situation, i.e. choosing both R₁ and R₂ of Simone to be methyl, as being a mere optimization of a "results effective variable".

Further, as to selection of the chain length numbers for the respective R groups, it has long been held that where the general conditions of the claims are disclosed in the prior art, discovering the optimal or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233; *In re Reese* 129 USPQ 402. Similarly, it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

However, there is nothing in the prior art which suggests any particular "result" which could be achieved by modifying these variables.

Altering a particular variable cannot be said to be mere optimization where the result of modifying the variable is different in kind from the prior art, and therefore unexpected. *In re Waymouth*, 499 F.2d 1273, 182 USPQ 290 (CCPA 1974); *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Further, altering a variable cannot be said to be mere optimization where the variable modified or manipulated was not known to be a result-effective variable, that is to say one which achieves a known or recognized result. MPEP 2144.05(ii)(b). (Emphasis added).

There is no indication in Simone whatsoever to suggest what different result might be achieved by limiting both R₁ and R₂ to be methyl. As such, Applicant submits that such a change does not represent mere optimization, and that such a change cannot be recognized by the skilled artisan as a "results effective variable", since no "known or recognized result" is described in Simone. Withdrawal of the rejection is requested on this basis.

Moreover, the Examiner is reminded that the differences between the prior art genus and the claimed species is not merely a difference in ranges. The claims are directed to different chemical compounds having different chemical properties.

From the standpoint of patent law, a compound and all of its properties are inseparable; they are one and the same thing. The graphic formulae, the chemical nomenclature, the systems of classification and study such as the concepts of homology, isomerism, etc., are mere symbols by which compounds can be identified, classified, and compared. But a formula is not a compound and while it may serve in a claim to identify what is being patented, as the metes and bounds of a deed identify a plot of land, the thing that is patented is not the formula but the compound identified by it. And the patentability of the thing does not depend on the similarity of its formula to that of another compound but of the similarity of the former compound to the latter. There is no basis in law for ignoring any property in making such a comparison. An assumed similarity based on a comparison of formulae must give way to evidence that the assumption is erroneous. *In re Papesch*, 315 F.2d 381, 391; emphasis added.

Accordingly, the selection of the presently claimed dimethyl tin catalysts is more than mere optimization of a range(s). Applicants have disclosed that the presently claimed compounds have significantly different chemical properties (non-fogging/low volatility) from those disclosed by Simone. Withdrawal of the rejection is requested on this basis.

Further, in a case almost directly on point, the CCPA held that homologs which are greatly different in carbon chain length do not make obvious lower carbon chain compounds.

...homologs which are far removed from adjacent homologs may not be expected to have similar properties. *In re Mills*, 281 F.2d 218, 126 USPQ 513 (CCPA 1960) (prior art disclosure of C₈ to C₁₂ alkyl sulfates was not sufficient to render *prima facie* obvious claimed C₁ alkyl sulfate). **MPEP 2144.09 II**

Clearly, the Examiner's conclusion is directly contrary to the court's ruling in *In re Mills*. Withdrawal of the rejection is requested on this basis.

Accordingly, Applicant submits that Simone not only fails to suggest dimethyl tin catalysts within the scope of the present claims, but effectively


teaches away from the presently claimed compounds. As such, Simone cannot be said to support a *prima facie* case of obviousness as to the present claims.

In view of the foregoing, it is respectfully submitted that the present claims are in condition for allowance. Prompt notification of allowance is respectfully requested.

If the Examiner has any questions or wishes to discuss this application, the Examiner is invited to contact the undersigned representative at the number set forth below.

Respectfully submitted,

Date: August 27, 2009


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